1. Improvements to Roads in Sahakar nagara from Big market to Ayyappa Swamy Temple Via Temple Kanti Sweets and Ganesha Temple Road in ward No 07, Byatarayanapura.

BRUHAT BANGALORE MAHANAGARA PALIKE

Project: 1.Improvements to Roads in Sahakar nagara from Big market to Ayyappa Swamy Temple Via Temple Kanti Sweets and Ganesha Temple Road in ward No 07,Byatarayanapura

Est Cost: =170.0Lakh

Sl. No.	Description of work	Unit	No.	Length m	Breadth m	Depth m	Quantity	Rate in Rs.	Amount in Rs.
1	Removing and resetting of footpath slab (P.No.265, I.No.37.56 of PW, P&IWTD SR 2016-17)								
	ch 950-1600		2	700.00	1.20	--	1680.00		
	ch 1600-2100		2	500.00	1.20	--	1200.00		
	ch 2100-2650		2	550.00	1.20	--	1320.00		
	Damaged slabs/missing 15%						-630.00		
							3570.00	132.50	**473025.00**
2	Providing and fixing **RCC Precast cover slab of 100mm thick** for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per drawing and the directions of Engineer in-charge. (Data Rate)								
	Cover Slab	Sqm							
	Damaged slabs/missing 15%						630.00		
							630.00	1738.00	**1094940.00**
3	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neately dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWTD SR 2016-17)								
	Desilt	Cum							
	Big market to Ayappa Temple via Kantisweets								
	950-2400		2	1450.00	0.60	0.50	870.00		
	2400-2650		2	250.00	0.60	0.50	150.00		
	Sahakaranagar A Block								
	23rd Main		2	166.00	0.60	0.50	99.60		
	Cross Road to 23rd Main		2	75.00	0.60	0.45	40.50		
	Road 1		2	35.00	0.60	0.45	18.90		
	22nd Main		2	175.00	0.60	0.50	105.00		
	Over Burden Earth								
			2	200.00	1.20	0.70	336.00		
							1620.00	202.92	**328730.40**
4	Providing and laying/fixing cement base, precast, pre polished cement concrete, designer tiles 25mm thick for flooring conforming to IS 1237 heavy duty tiles for flooring, treads of steps and landing, laid on a bed of 12mm thick cement mortar 1:3 mis finished with flush pointing using white cement, including cost of materials, including cutting, griding the edge to half/full round wherever required, labour, curing complete as per specification. (P.No. 109, I.No. 14.62 of PWD SR 2016-17)								
	Missing/Damaged Tiled footpath								
	ch 950-1600		2	300.00	1.00	--	600.00		
	ch 1600-2100		2	150.00	1.00	--	300.00		
	ch 2100-2650		2	145.00	1.50	--	435.00		
							1335.00	1150.10	**1535383.50**
5	KSRRB M300-14. Excavation for roadwork in soil with hydraulic excavator of 0.90 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to embankment location and complete as per specifications. MORTH Specification No.301 (P.No.143, I.No.19.14 of PW,P&IWTD S.R 2016-17)								

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	Road Portion	Cum							
	Ch0-260		1	255.00	7.20	0.45	826.20		
	for bescom and ugd cut restoration		1	800.00	1.90	0.45	684.00		
	Bad Reaches		5	2.40	2.50	0.23	6.90		
			8	1.80	1.50	0.23	4.97		
			1	15.00	2.30	0.23	7.94		
			10	1.50	1.20	0.23	4.14		
							1534.14	164.76	**252765.40**
6	KSRRB M400-6.1. Construction of granular sub-base by providing close graded crushed stone aggregates of granite / trap / basalt material, mixing in a mechaical mix plant at OMC, carriage of mixed material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications. A. Plant Mix Method. - For Grading II Materiall(P.No.155, I.No.20.4.2 of PW,P&IWTD S.R 2016-17)								
	Road Portion	Cum							
	for bescom and ugd cut restoration		1	800.00	1.90	0.15	228.00		
							228.00	1665.26	**379679.28**
7	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechaniqal mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density.complete as per specifications. MORTH Specification No. 406 (P.No.158, I.No.20.18 of PW,P&IWTD SR 2016-17)								
	Road Portion	Cum							
	Ch0-260		1	255.00	7.20	0.25	459.00		
	for bescom and ugd cut restoration		1	800.00	1.90	0.25	380.00		
	Bad Reaches		5	2.40	2.50	0.23	6.90		
			8	1.80	1.50	0.23	4.97		
			1	15.00	2.30	0.23	7.94		
			10	1.50	1.20	0.23	4.14		
							862.94	1768.08	**1525752.26**
8	KSRRB M 500-6, Providing and applying primer coat with SS bitumen emulsion on prepared surface of granular Base such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kglsqm using mechanical means complete as per specifications. As per MORTH specification clause No. 502 (P.No.161, I.No.21.6 of PW,P&IWTD SR 2016-17)								
	Road Portion	Cum							
	Ch0-260		1	255.00	7.20	--	1836.00		
	for bescom and ugd cut restoration		1	800.00	1.90	--	1520.00		
	Bad Reaches		5	2.40	2.50	--	30.00		
			8	1.80	1.50	--	21.60		
			1	15.00	2.30	--	34.50		
			8	1.50	1.20	--	14.40		
							3456.50	27.56	**95261.14**
9	KSRRB 500-2: Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatement including cost of all materials, labour, HOM of machineries complete as per specifications. MORTH Spec, Chapter 5 (P.No.161, I.No.21.2 of PW,P&IWTD SR 2016-17)								
		Sqm							
	For Laying BC								
	Ch0-260		1	255.00	7.20	--	1836.00		
	ch 950-1600		1	650.00	11.50	--	7475.00		
	ch 1600-2100		1	500.00	11.00	--	5500.00		
	ch 2100-2650		1	550.00	13.50	--	7425.00		
	Sahakaranagar A Block								

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	23rd Main		1	166.00	6.50	--	1079.00		
	Cross Road to 23rd Main		1	75.00	6.30	--	472.50		
	Road 1		1	35.00	6.00	--	210.00		
	22nd Main		1	175.00	6.80	--	1190.00		
	Bellmouth and Approaches		37	5.30	5.00	--	980.50		
							26168.00		
	Deduct prime coat						-3456.50		
							22711.50	3.18	**72222.57**
10	KSRRB M500-7 : Providing and applying tack coat using 80/100 grade bitumen (VG10) on prepared black topped surfaces at 2.5 Kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH / Chapter 5 (P.No.161 I.No.21.7 of PW,P&IWTD SR of 2016-17)								
	Road Portion	Sqm							
	For Laying DBM								
	Ch0-260		1	255.00	7.20	--	1836.00		
	for bescom and ugd cut restoration		1	800.00	1.90	--	1520.00		
	For Laying BC								
	Ch0-260		1	255.00	7.20	--	1836.00		
	ch 950-1600		1	650.00	11.50	--	7475.00		
	ch 1600-2100		1	500.00	11.00	--	5500.00		
	ch 2100-2650		1	550.00	13.50	--	7425.00		
	Sahakaranagar A Block								
	23rd Main		1	166.00	6.50	--	1079.00		
	Cross Road to 23rd Main		1	75.00	6.30	--	472.50		
	Road 1		1	35.00	6.00	--	210.00		
	22nd Main		1	175.00	6.80	--	1190.00		
	Bellmouth and Approaches		37	5.30	5.00	--	980.50		
							29524.00	12.72	**375545.28**
11	KSRRB M500-17. Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10 complete in all respects complete as per specifications.. MORTH Specification No. 507 - using 40/60 TPH capacity H.M.P. with Mechanical paver Gr-II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen (P.No.165 of I.No.21.17.6 in PW,P&IWTD S.R 2016-17)								
	Road Portion	Cum							
	Ch0-260		1	255.00	7.20	0.05	91.80		
	for bescom and ugd cut restoration		1	800.00	1.90	0.05	76.00		
							167.80	7120.02	**1194739.36**
12	KSRRB M500-19. Providing and laying bituminous concrete 30-40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 5.4% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509 (P.No.165 of I.No.21.22.6 in PW,P&IWTD S.R 2016-17)								
	Road Portion	Cum							
	Ch0-260		1	255.00	7.20	0.04	73.44		
	ch 950-1600		1	650.00	11.50	0.04	299.00		
	ch 1600-2100		1	500.00	11.00	0.04	220.00		
	ch 2100-2650		1	550.00	13.50	0.04	297.00		
	Sahakaranagar A Block								

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	23rd Main		1	166.00	6.50	0.04	43.16		
	Cross Road to 23rd Main		1	75.00	6.30	0.04	18.90		
	Road 1		1	35.00	6.00	0.04	8.40		
	22nd Main		1	175.00	6.80	0.04	47.60		
	Bellmouth and Approaches		37	5.30	5.00	0.04	39.22		
							1046.72	8118.54	**8497838.19**
13	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.(P.No.185, I.No.24.15 of PW,P&IWTD SR 2016-17)								
	Edge line	Sqm	2	2406.00	0.10	--	481.20		
	Centre line		0.5	2296.00	0.10	--	114.80		
							596.00	542.72	**323461.12**
14	Removing and resetting of kerb stones(P.No.185, I.No.37.57 of PW,P&IWTD SR 2016-17)								
		m	2	1650.00		--	3300.00		
	Consider 10% Missing and Damaged Kerbs						-330.00		
							2970.00	65.72	**195188.40**
15	Providing and fixing pre cast solid cement concrete kerb stones made out of CC 1:2:4 with top and bottom width 114 and 165 mm respectively, 400mm high and 450mm in length finished with CM 1:3 plastering and finishing cutting including formwork, curing, including cost of materials, labour charges of machinery, loading and unloading, lead and lift, transportation ete.,complete. (P.No.25, I.No.5.30 of PW,P&IWTD S.R 2016-17)								
		No.							
	New Kerbs								
	Consider 10% Missing and Damaged Kerbs		1	330.00	--	/0.45	733.00		
							733.00	331.78	**243194.74**
16	KSRRB 800-1. Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8 (P.No.182, I.No. 24.1 of PW,P&IWTD SR 2016-17)								
	Kerb Paiting	Sqm							
			2	1650.00	--	0.35	1155.00		
							1155.00	63.60	**73458.00**
							Total Construction Cost		**16661184.64**
17							**Cost towards Preparation of DPR LS**		**166612.00**
18							**Cost towards PMC / Third Party inspection LS**		**166612.00**
								Sub Total	**16994408.64**
19							**Miscellaneous and rounding off**		**5591.36**
								Total	**17000000.00**

Certificate.

1 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.
2 The provisions made in the estimate are necessary and essential.
3 The workspot was inspected and work is found to be necessary.
4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.

Tejus Consultant

Assistant Engineer

Assistant Executive Engineer

Executive Engineer

Technical Sanction
Accorded For 170.00 Lakhs
Head of A/C P3158
CER NO "19" Dt. 29/01/18

TA — E (YNK)

KEY MAP – 1. Big Market Road

2. Improvements to roads and drains of Sanjeevini Nagar Main road to Military Compound next to Sterling apartment to Kodigehalli main road in ward no 07

BRUHAT BANGALORE MAHANAGARA PALIKE

Project: 2.Improvements to roads and drains of Sanjeevini Nagar Main road to Military Compound next to Sterling apartment to Kodigehalli main road in ward no 07

Est Cost: 50.0Lakh

Sl. No.	Description of work	Unit	No.	Length m	Breadth m	Depth m	Quantity	Rate in Rs.	Amount in Rs.
1	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neately dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWTD SR 2016-17)								
	Desilt	Cum							
	u shape road from kodigehalli main road								
	ch 0-300		2	300.00	0.60	0.50	180.00		
	ch 300-430		2	130.00	0.70	0.60	109.20		
	ch 430-720		2	290.00	0.60	0.55	191.40		
	Shakaranagar E Block								
	1st Cross in 14th A main		2	125.00	0.60	0.55	82.50		
	RNS JCB Service center Beside RD(14th A Mn to Dead end)		2	128.00	0.60	0.55	84.48		
	Opp to Karur Vysya Bank		2	50.00	0.60	0.55	33.00		
	3rd Cross in 14th A Main		2	50.00	0.60	0.55	33.00		
	Road - Opp to RNS JCB		2	60.00	0.60	0.55	39.60		
	12th Cross		2	85.00	0.60	0.50	51.00		
							804.18	202.92	**163184.21**
2	Removing and refixing stone slabs of drains and pointing in CM (1:3) (P.No.25, I.No.5.33 of PW, P&IWTD SR 2016-17)								
	u shape road from kodigehalli main road	Sqm							
	ch 0-300		2	100.00	1.80		360.00		
	ch 430-720		2	120.00	1.80		432.00		
	Shakaranagar E Block								
	1st Cross in 14th A main		2	125.00	1.80		450.00		
	RNS JCB Service center Beside RD(14th A Mn to Dead end)		2	128.00	1.80		460.80		
	Opp to Karur Vysya Bank		2	50.00	1.80		180.00		
	3rd Cross in 14th A Main		2	50.00	1.80		180.00		
	Road - Opp to RNS JCB		2	60.00	1.80		216.00		
	12th Cross		2	85.00	1.80		306.00		
	Consider 40% for R&R						1033.92		
	Consider 20% for Damaged and Missing Slabs for Drain						-206.78		
							827.14	80.56	**66634.08**
3	Providing granite Slabs of Selected quality roughly dressed and fixed in cement mortor (1:6) including fixing curing etc,. Complete. 7.5cms thick (P.No.25, I.No.5.31.1 of PW, P&IWTD SR 2016-17)								
	For BS Slab Drain	Sqm							
	ch 300-430		2	130.00	1.80		468.00		
	Consider 20% for Damaged and Missing Slabs for Drain						206.78		
							674.78	665.68	**449190.21**
4	KSRRB M300-14. Excavation for roadwork in soil with hydraulic excavator of 0.90 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to embankment location and complete as per specifications. MORTH Specification No.301 (P.No.143, I.No.19.14 of PW,P&IWTD S.R 2016-17)								
	Road Portion	Cum							
	u shape road from kodigehalli main road								

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	Shakaranagar E Block								
	RNS JCB Service center Beside RD(14th A Mn to Dead end)		1	128.00	5.10	0.23	150.14		
	Bad Reaches		10	2.20	2.00	0.23	10.12		
			12	1.80	1.50	0.23	7.45		
			1	54.00	5.80	0.23	72.04		
							239.75	164.76	**39501.54**
5	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechaniqal mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density.complete as per specifications. MORTH Specification No. 406 (P.No.158, I.No.20.18 of PW,P&IWTD SR 2016-17)								
	Road Portion	Cum							
	u shape road from kodigehalli main road								
	RNS JCB Service center Beside RD(14th A Mn to Dead end)		1.00	128.00	5.10	0.23	150.14		
	Bad Reaches		10.00	2.20	2.00	0.23	10.12		
			12.00	1.80	1.50	0.23	7.45		
			1.00	54.00	5.80	0.23	72.04		
							239.75	1768.08	**423900.72**
6	KSRRB M 500-6, Providing and applying primer coat with SS bitumen emulsion on prepared surface of granular Base such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kglsqm using mechanical means complete as per specifications. As per MORTH specification clause No. 502 (P.No.161, I.No.21.6 of PW,P&IWTD SR 2016-17)								
	Road Portion	Sqm							
	u shape road from kodigehalli main road								
	RNS JCB Service center Beside RD(14th A Mn to Dead end)		1.00	128.00	5.10	--	652.80		
	Bad Reaches		10	2.20	2.00	--	44.00		
			12	1.80	1.50	--	32.40		
			1	54.00	5.80	--	313.20		
							1042.40	27.56	**28728.54**
7	KSRRB 500-2: Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatement including cost of all materials, labour, HOM of machineries complete as per specifications. MORTH Spec, Chapter 5 (P.No.161, I.No.21.2 of PW,P&IWTD SR 2016-17)								
	Road Portion	Sqm							
	u shape road from kodigehalli main road								
	ch 0-300		1	300.00	7.50	--	2250.00		
	ch 300-430		1	130.00	10.60	--	1378.00		
	ch 430-720		1	290.00	11.30	--	3277.00		
	Shakaranagar E Block								
	1st Cross in 14th A main		1.00	125.00	6.00	--	750.00		
	Opp to Karur Vysya Bank		1.00	50.00	5.90	--	295.00		
	3rd Cross in 14th A Main		1.00	50.00	6.10	--	305.00		
	Road - Opp to RNS JCB		1.00	60.00	6.10	--	366.00		
	Deduct prime coat						-389.60		
							8231.40	3.18	**26175.85**

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
8	KSRRB M500-7 : Providing and applying tack coat using 80/100 grade bitumen (VG10) on prepared black topped surfaces at 2.5 Kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH / Chapter 5 (P.No.161 I.No.21.7 of PW,P&IWTD SR of 2016-17)								
	For laying DBM	Sqm							
	Bad Reaches		10.00	2.20	2.00	--	44.00		
			12.00	1.80	1.50	--	32.40		
			1.00	54.00	5.80	--	313.20		
	For Laying BC								
	u shape road from kodigehalli main road								
	ch 0-300		1.00	300.00	7.50	--	2250.00		
	ch 300-430		1.00	130.00	10.60	--	1378.00		
	ch 430-720		1.00	290.00	11.30	--	3277.00		
	Shakaranagar E Block								
	1st Cross in 14th A main		1.00	125.00	6.00	--	750.00		
	Opp to Karur Vysya Bank		1.00	50.00	5.90	--	295.00		
	3rd Cross in 14th A Main		1.00	50.00	6.10	--	305.00		
	Road - Opp to RNS JCB		1.00	60.00	6.10	--	366.00		
	RNS JCB Service center Beside RD(14th A Mn to Dead end)		1.00	128.00	5.10	--	652.80		
							9663.40	12.72	**122918.45**
9	KSRRB M500-17. Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10 complete in all respects complete as per specifications.. MORTH Specification No. 507 - using 40/60 TPH capacity H.M.P. with Mechanical paver Gr-II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen (P.No.165 of I.No.21.17.6 in PW,P&IWTD S.R 2016-17)								
	Profile Correction	Cum							
	Bad Reaches		10.00	2.20	2.00	0.05	2.20		
			12.00	1.80	1.50	0.05	1.62		
			1.00	54.00	5.80	0.05	15.66		
							19.48	7120.02	**138697.99**
10	KSRRB M500-19. Providing and laying bituminous concrete 30-40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 5.4% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509 (P.No.165 of I.No.21.22.6 in PW,P&IWTD S.R 2016-17)								
	For laying DBM	Cum							
	u shape road from kodigehalli main road								
	ch 0-300		1.00	300.00	7.50	0.04	90.00		
	ch 300-430		1.00	130.00	10.60	0.04	55.12		
	ch 430-720		1.00	290.00	11.30	0.04	131.08		
	Shakaranagar E Block								
	1st Cross in 14th A main		1.00	125.00	6.00	0.04	30.00		
	Opp to Karur Vysya Bank		1.00	50.00	5.90	0.04	11.80		
	3rd Cross in 14th A Main		1.00	50.00	6.10	0.04	12.20		
	Road - Opp to RNS JCB		1.00	60.00	6.10	0.04	14.64		
	RNS JCB Service center Beside RD(14th A Mn to Dead end)		1.00	128.00	5.10	0.04	26.11		
							370.95	8118.54	**3011588.65**

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
11	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.(P.No.185, I.No.24.15 of PW,P&IWTD SR 2016-17)								
	Edge line	Sqm	2	1133.00	0.10	--	226.60		
							226.60	542.72	**122980.35**
12	Cement concrete pavement.Construction of un-reinforced plain cement concrete pavement, thickness as per design, over a prepared sub base with OPC cement or any other type as per clause 1051.2.2 design mix M20/M30 , with 25mm and down size graded granite metal coarse aggregates and fine aggregtes , with superplastisiser @3lts confirming to IS9103-1999 Reaffirmed-2008 , mixed in a concrete mixer of not less than 0.6 cum capacity and appropriate weigh batcher as per approved mix design, laid in approved fixed side form work (steel channel, laying and fixing of 125 micron thick polythene film, wedges, steel plates including levelling the form work as per drawing). Spreading the concrete with shovels, rackers compacted using needle, screed and plate vibrator and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints including groove cutting charges, joint filler, separation membrane, selant primer, joint sealant, admixtures as approved, curing compound, finishing to lines and grades as per drawing complete as per specifications. - M30 (at 360Kg per cum coarse aggregate @ 0.69cum and fine aggregate @ 0.46cum) ((P.No.177, I.No.22.6.1 of PW,P&IWTD SR 2016-17)								
	Road Portion	Cum							
	12th Cross		1.00	85.00	5.00	0.10	42.50		
							42.50	6217.96	**264263.30**
13	Vaccum de-watering with vaccum pump and suction mat and compaction with skin floater clubbed with floating disc including cost of generator, HOM of machinery, Screed Vibratory, Power Floater, blade and disc etc., with all lead and lift.(P.No.177, I.No.22.7 of PW, P&IWTD SR 2016-17)								
	Road Portion	Sqm							
	12th Cross		1	85.00	5.00	--	425.00		
							425.00	95.40	**40545.00**
							Total Construction Cost		**4898308.893**
14							**Cost towards Preparation of DPR LS**		**48984.00**
15							**Cost towards PMC / Third Party inspection LS**		**48984.00**
								Sub Total	**4996276.89**
16							**Miscellaneous and rounding off**		**3723.11**
								Total	**5000000.00**

Certificate.

1 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.
2 The provisions made in the estimate are necessary and essential.
3 The workspot was inspected and work is found to be necessary.
4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.

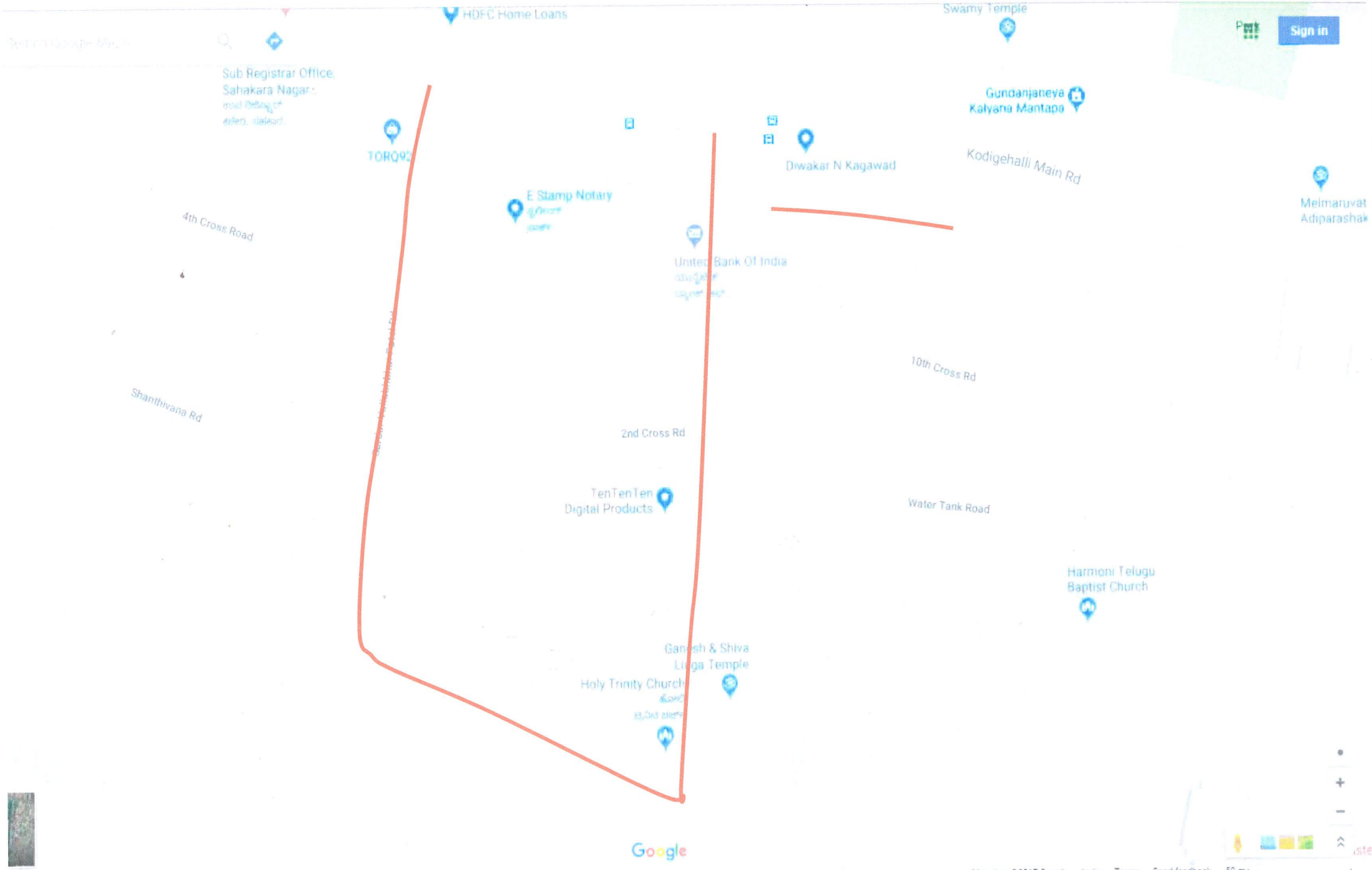
Tejus Consultant
Assistant Engineer

Assistant Executive Engineer

Executive Engineer

Technical Sanction
Accorded For ..... 50.00 Lakhs
Head of A/C P3158
CER NO ..... Dt:... 29/01/18

KEY MAP – 2. Sanjeevini Nagar



KEY MAP – 2. Sahakar Nagar E Block

3. Improvements to roads and drains Amruthanagara A sector and D Munishamappa Layout in ward no 07. Byataryanapura.

BRUHAT BANGALORE MAHANAGARA PALIKE

Project: 3.Improvements to roads and drains Amruthanagara A sector and D Munishamappa Layout in ward no 07.Byataryanapura

Est Cost: 100.0Lakh

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
1	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neately dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWTD SR 2016-17)								
	Desilt	Cum							
	1st main amruthalli A sector								
	ch 0-300		2	300.00	0.60	0.50	180.00		
	Ch 300-400		2	100.00	0.60	0.60	72.00		
	3rd cross		2	280.00	0.60	0.60	201.60		
	2nd main		2	300.00	0.60	0.60	216.00		
	2nd cross		1	150.00	0.60	0.60	54.00		
	5th Cross (Maruthi Farm)		1	90.00	0.60	0.60	32.40		
	L Shape Road		2	70.00	0.60	0.60	50.40		
	Maruthi Farm Main Road		2	145.00	0.60	0.60	104.40		
	Munisawamappa Layout		1	80.00	0.60	0.60	28.80		
	Muniramaiah Layout		1	40.00	0.60	0.60	14.40		
	1st Cross (maruthi farm)		1	30.00	0.60	0.60	10.80		
	8th Cross (maruthi Farm)		2	130.00	0.60	0.60	93.60		
	4th Main Road		2	150.00	0.60	0.60	108.00		
	1st Cross in 3rd Main		2	105.00	0.60	0.60	75.60		
	1st Cross Road		2	108.00	0.60	0.60	77.76		
	New Drain								
	ch 400-540		2	140.00	0.75	0.60	126.00		
	5th Cross (Maruthi Farm)		1	90.00	0.75	0.60	40.50		
	3rd cross (Maruthi Farm)		2	40.00	0.75	0.60	36.00		
	Maruthi Farm Road (Lake Side Rd)		1	360.00	0.75	0.60	162.00		
	Munisawamappa Layout		1	80.00	0.75	0.60	36.00		
	Culvert		8	6.00	2.00	1.25	120.00		
							1840.26	202.92	**373425.56**
2	Removing and refixing stone slabs of drains and pointing in CM (1:3) (P.No.25, I.No.5.33 of PW, P&IWTD SR 2016-17)								
	1st main amruthalli A sector	Sqm							
	ch 0-300		2	300.00	1.80		1080.00		
	Ch 300-400		2	100.00	1.80		360.00		
	3rd cross		2	280.00	1.80		1008.00		
	2nd main		2	300.00	1.80		1080.00		
	2nd cross		1	150.00	1.80		270.00		
	8th Cross (maruthi Farm)		2	130.00	1.80		468.00		
	4th Main Road		2	150.00	1.80		540.00		
	1st Cross in 3rd Main		2	105.00	1.80		378.00		
	1st Cross Road		2	108.00	1.80		388.80		
	Consider 30% for R&R						1671.84		
	Consider Damaged and Missing Slabs of Drain						-334.37		
	cover		2	75.00	1.20		180.00		
	Consider Damaged and Missing Slabs for BS Cover						-36.00		
							1481.47	80.56	**119347.38**
3	Providing granite Slabs of Selected quality roughly dressed and fixed in cement mortor (1:6) including fixing curing etc,. Complete. 7.5cms thick (P.No.25, I.No.5.31.1 of PW, P&IWTD SR 2016-17)								
	For BS Slab Drain	Sqm							

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	1st main amruthalli A sector								
	ch 400-540		2	140.00	1.80		504.00		
	5th Cross (Maruthi Farm)		1	90.00	1.80		162.00		
	3rd cross (Maruthi Farm)		2	40.00	1.80		144.00		
	Maruthi Farm Road (Lake Side Rd)		1	360.00	1.80		648.00		
	Munisawamappa Layout		1	80.00	1.80		144.00		
	Consider Damaged and Missing Slabs of Drain						334.37		
							1936.37	665.68	**1289001.45**
4	Providing granite Slabs of Selected quality roughly dressed and fixed in cement mortor (1:6) including fixing curing etc,. Complete. 10cms thick (P.No.25, I.No.5.31.2 of PW, P&IWTD SR 2016-17)								
	For BS Slab Drain Cover	Sqm							
	Consider Damaged and Missing Slabs for BS Cover						36.00		
							36.00	825.74	**29726.64**
5	KSRB 4-1.2: Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @ 220kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.892 cum and fine aggregates @ 0.465 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.2 of PW,P&IWTD S.R 2016-17)								
	Bed Concrete	Cum							
	Culvert		8.00	6.00	2.00	0.15	14.40		
							14.40	5348.76	**77022.14**
6	KSRB 5.2-3: Providing and constructing granite size stone masonry in foundation cement mortor 1:6, stone hammered dressed in courses not less than 20cms high, bond stones at 2m. apart in each course including cost of materaials, labour, curing complete as per specifications. Specifcation No. KBS 5.1.13. (P.No.23, I.No.5.6 of PW, P&IWTD S.R 2016-17)								
		Cum							
	Culvert	2	8.00	6.00	0.60	1.10	63.36		
							63.36	4438.22	**281205.62**
7	KSRB 15.1.1 Providing flush pointing to square rubble, course or uncoursed stone masonry with cement mortar 1:3, 20mm deep, after raking joints to depth of 20mm nicely lining, including cost of materials, labour, curing complete as per specifications. (P.No.113, I.No.15.1 of PW, P&IWTD S.R 2016-17)								
	Culvert	Cum							
		2.00	8.00	6.00		1.10	105.60		
							105.60	102.82	**10857.79**
8	KSRB 4-1.6: Providing and laying in position plain cement concrete of mix 1:2:4 with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.878 cum and fine aggregates @ 0.459 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation and plinth, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.6 of PW,P&IWTD S.R 2016-17)								
	Coping	Cum							
		2	8	6.00	0.60	0.100	5.76		
							5.76	5767.46	**33220.57**
9	Providing and fixing **RCC Precast cover slab of 250mm thick** for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per drawing and the directions of Engineer in-charge. (Data Rate)								
	Culvert Slab	Sqm							
	Culvert Slab		8	6.00	1.80	--	86.40		
							86.40	4951.00	**427766.40**

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
10	KSRRB M300-14. Excavation for roadwork in soil with hydraulic excavator of 0.90 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to embankment location and complete as per specifications. MORTH Specification No.301 (P.No.143, I.No.19.14 of PW,P&IWTD S.R 2016-17)								
	Road Portion	Cum							
	1st main amruthalli A sector								
	Maruthi Farm Road (Lake Side Rd)		1	360.00	4.80	0.23	397.44		
	5th Cross (Maruthi Farm)		1	90.00	7.00	0.23	144.90		
	3rd cross (Maruthi Farm)		1	40.00	5.00	0.23	46.00		
	Munisawamappa Layout		1	80.00	4.00	0.23	73.60		
	UGD Cut								
	8th Cross (maruthi Farm)		1	130.00	2.00	0.23	59.80		
	Bad Reaches		7	2.50	2.50	0.23	10.06		
			8	2.00	2.00	0.23	7.36		
			9	1.50	1.50	0.23	4.66		
							743.82	164.76	**122551.78**
11	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechaniqal mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density.complete as per specifications. MORTH Specification No. 406 (P.No.158, I.No.20.18 of PW,P&IWTD SR 2016-17)								
	Road Portion	Cum							
	1st main amruthalli A sector								
	Maruthi Farm Road (Lake Side Rd)		1	360.00	4.80	0.23	397.44		
	5th Cross (Maruthi Farm)		1	90.00	7.00	0.23	144.90		
	3rd cross (Maruthi Farm)		1	40.00	5.00	0.23	46.00		
	Munisawamappa Layout		1	80.00	4.00	0.23	73.60		
	UGD Cut								
	8th Cross (maruthi Farm)		1	130.00	2.00	0.23	59.80		
	Bad Reaches		7	2.50	2.50	0.23	10.06		
			8	2.00	2.00	0.23	7.36		
			9	1.50	1.50	0.23	4.66		
							743.82	1768.08	**1315133.27**
12	KSRRB M 500-6, Providing and applying primer coat with SS bitumen emulsion on prepared surface of granular Base such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kglsqm using mechanical means complete as per specifications. As per MORTH specification clause No. 502 (P.No.161, I.No.21.6 of PW,P&IWTD SR 2016-17)								
	Road Portion	Sqm							
	1st main amruthalli A sector								
	Maruthi Farm Road (Lake Side Rd)		1.00	360.00	4.80	--	1728.00		
	5th Cross (Maruthi Farm)		1.00	90.00	7.00	--	630.00		
	3rd cross (Maruthi Farm)		1.00	40.00	5.00	--	200.00		
	Munisawamappa Layout		1.00	80.00	4.00	--	320.00		
	UGD Cut								
	8th Cross (maruthi Farm)		1.00	130.00	2.00	--	260.00		
	Bad Reaches		7.00	2.50	2.50	--	43.75		
			8.00	2.00	2.00	--	32.00		
			9.00	1.50	1.50	--	20.25		
							3234.00	27.56	**89129.04**
13	KSRRB 500-2: Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatement including cost of all materials, labour, HOM of machineries complete as per specifications. MORTH Spec, Chapter 5 (P.No.161, I.No.21.2 of PW,P&IWTD SR 2016-17)								
	1st main amruthalli A sector	Sqm							
	ch 0-300		1.00	300.00	7.60	--	2280.00		

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	Ch 300-400		1.00	100.00	6.50	--	650.00		
	ch 400-540		1.00	140.00	6.60	--	924.00		
	3rd cross		1.00	280.00	6.70	--	1874.60		
	2nd Main Road		1.00	300.00	6.00	--	1800.00		
	2nd Cross Road		1.00	150.00	5.50	--	825.00		
	L Shape Road		1.00	70.00	5.00	--	350.00		
	Maruthi Farm Main Road		1.00	145.00	4.60	--	667.00		
	Muniramaiah Layout		1.00	40.00	3.50	--	140.00		
	1st Cross (maruthi farm)		1.00	30.00	4.50	--	135.00		
	8th Cross (maruthi Farm)		1.00	130.00	5.20	--	676.00		
	4th Main Road		1.00	150.00	6.20	--	930.00		
	1st Cross in 3rd Main		1.00	105.00	6.10	--	640.50		
	1st Cross Road		1.00	108.00	5.90	--	637.20		
	Approaches		10.00	5.00	6.00	--	300.00		
							12829.30		
	Deduct prime coat						-356.00		
							12473.30	3.18	**39665.09**
14	KSRRB M500-7 : Providing and applying tack coat using 80/100 grade bitumen (VG10) on prepared black topped surfaces at 2.5 Kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH / Chapter 5 (P.No.161 I.No.21.7 of PW,P&IWTD SR of 2016-17)								
	Road Portion	Sqm							
	For Laying BC								
	1st main amruthalli A sector								
	ch 0-300		1.00	300.00	7.60	--	2280.00		
	Ch 300-400		1.00	100.00	6.50	--	650.00		
	ch 400-540		1.00	140.00	6.60	--	924.00		
	3rd cross		1.00	280.00	6.70	--	1874.60		
	2nd Main Road		1.00	300.00	6.00	--	1800.00		
	2nd Cross Road		1.00	150.00	5.50	--	825.00		
	Maruthi Farm Road (Lake Side Rd)		1.00	360.00	4.80	--	1728.00		
	5th Cross (Maruthi Farm)		1.00	90.00	7.00	--	630.00		
	3rd cross (Maruthi Farm)		1.00	40.00	5.00	--	200.00		
	Munisawamappa Layout		1.00	80.00	4.00	--	320.00		
	Muniramaiah Layout		1.00	40.00	3.50	--	140.00		
	1st Cross (maruthi farm)		1.00	30.00	4.50	--	135.00		
	8th Cross (maruthi Farm)		1.00	130.00	5.20	--	676.00		
	4th Main Road		1.00	150.00	6.20	--	930.00		
	1st Cross in 3rd Main		1.00	105.00	6.10	--	640.50		
	1st Cross Road		1.00	108.00	5.90	--	637.20		
	L Shape Road		1.00	70.00	5.00	--	350.00		
	Maruthi Farm Main Road		1.00	145.00	4.60	--	667.00		
	Approaches		10.00	5.00	6.00	--	300.00		
							15707.30	12.72	**199796.86**
15	KSRRB M500-19. Providing and laying bituminous concrete 30-40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 5.4% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509 (P.No.165 of I.No.21.22.6 in PW,P&IWTD S.R 2016-17)								
	Road Portion	Cum							
	1st main amruthalli A sector								
	ch 0-300		1.00	300.00	7.60	0.04	91.20		
	Ch 300-400		1.00	100.00	6.50	0.04	26.00		

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	ch 400-540		1.00	140.00	6.60	0.04	36.96		
	3rd cross		1.00	280.00	6.70	0.04	74.98		
	2nd Main Road		1.00	300.00	6.00	0.04	72.00		
	2nd Cross Road		1.00	150.00	5.50	0.04	33.00		
	Maruthi Farm Road (Lake Side Rd)		1.00	360.00	4.80	0.04	69.12		
	5th Cross (Maruthi Farm)		1.00	90.00	7.00	0.04	25.20		
	3rd cross (Maruthi Farm)		1.00	40.00	5.00	0.04	8.00		
	Munisawamappa Layout		1.00	80.00	4.00	0.04	12.80		
	Muniramaiah Layout		1.00	40.00	3.50	0.04	5.60		
	1st Cross (maruthi farm)		1.00	30.00	4.50	0.04	5.40		
	8th Cross (maruthi Farm)		1.00	130.00	5.20	0.04	27.04		
	4th Main Road		1.00	150.00	6.20	0.04	37.20		
	1st Cross in 3rd Main		1.00	105.00	6.10	0.04	25.62		
	1st Cross Road		1.00	108.00	5.90	0.04	25.49		
	L Shape Road		1.00	70.00	5.00	0.04	14.00		
	Maruthi Farm Main Road		1.00	145.00	4.60	0.04	26.68		
	Approaches		10.00	5.00	6.00	0.04	12.00		
							628.29	8118.54	**5100813.73**
16	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.(P.No.185, I.No.24.15 of PW,P&IWTD SR 2016-17)								
	Edge line	Sqm	2	2618.00	0.10	--	523.60		
	Center line		0.5	300.00	0.10	--	15.00		
							538.60	542.72	**292308.99**
								Total Construction Cost	**9800972.311**
17							**Cost towards Preparation of DPR LS**		**98010.00**
18							**Cost towards PMC / Third Party inspection LS**		**98010.00**
								Sub Total	**9996992.31**
19							**Miscellaneous and rounding off**		**3007.69**
								Total	**10000000.00**

Certificate.

1 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.
2 The provisions made in the estimate are necessary and essential.
3 The workspot was inspected and work is found to be necessary.
4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.

For Tejus Consultants

Assistant Engineer

Assistant Executive Engineer

Executive Engineer

Technical Sanction
Accorded For ..... 100.00 Lakhs
Head of A/c PS158
CER NO ..... Dt... 29/01/18

(YNK)

KEY MAP – 3. Amruthahalli A & D Block

4. Improvements to roads and drains from 18th Cross to JNC Circle(Left Hand Side and Right Hand Side Roads from Renuka Yellamma Temple Road to JNC Circle) in Ward No.7, Byatarayanapura.

BRUHAT BANGALORE MAHANAGARA PALIKE

Project: 4.Improvements to roads and drains from 18th Cross to JNC Circle(Left Hand Side and Right Hand Side Roads from Renuka Yellamma Temple Road to JNC Circle) in Ward No.7,Byatarayanapura

Est Cost: 75.0Lakh

Sl. No.	Description of work	Unit	No.	Length m	Breadth m	Depth m	Quantity	Rate in Rs.	Amount in Rs.
1	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neately dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWTD SR 2016-17)								
	Desilt	Cum							
	1st Cross Road		2	35.00	0.60	0.60	25.20		
	2nd Cross Road		2	40.00	0.60	0.60	28.80		
	3rd Cross Road		2	50.00	0.60	0.60	36.00		
	4th Cross Road		2	60.00	0.60	0.60	43.20		
	5th Cross Road		2	65.00	0.60	0.60	46.80		
	6th Cross Road		2	86.00	0.60	0.60	61.92		
	New Drain								
	7th Cross Road		2	40.00	0.70	0.60	33.60		
	Srirampura Mn Rd to Jakkur Double Rd		2	435.00	0.70	0.60	365.40		
							640.92	202.92	**130055.49**
2	Removing and refixing stone slabs of drains and pointing in CM (1:3) (P.No.25, I.No.5.33 of PW, P&IWTD SR 2016-17)								
	Drain	Sqm							
	1st Cross Road		2	35.00	1.80		126.00		
	2nd Cross Road		2	40.00	1.80		144.00		
	3rd Cross Road		2	50.00	1.80		180.00		
	4th Cross Road		2	60.00	1.80		216.00		
	5th Cross Road		2	65.00	1.80		234.00		
	6th Cross Road		2	86.00	1.80		309.60		
							1209.60		
	Consider Damaged and Missing Slabs						-272.16		
							937.44	80.56	**75520.17**
3	Providing granite Slabs of Selected quality roughly dressed and fixed in cement mortor (1:6) including fixing curing etc,. Complete. 7.5cms thick (P.No.25, I.No.5.31.1 of PW, P&IWTD SR 2016-17)								
	For BS Slab Drain	Sqm							
	New Drain								
	7th Cross Road		2	40.00	1.80		144.00		
	Srirampura Mn Rd to Jakkur Double Rd		2	435.00	1.80		1566.00		
	Consider Damaged and Missing Slabs						272.16		
							1982.16	665.68	**1319484.27**
4	KSRRB M300-14. Excavation for roadwork in soil with hydraulic excavator of 0.90 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to embankment location and complete as per specifications. MORTH Specification No.301 (P.No.143, I.No.19.14 of PW,P&IWTD S.R 2016-17)								
	Road Portion	Cum							
	1st Cross Road		1.00	40.00	5.00	0.23	46.00		
	2nd Cross Road		1.00	50.00	5.20	0.23	59.80		
	3rd Cross Road		1.00	55.00	4.80	0.23	60.72		
	4th Cross Road		1.00	65.00	6.50	0.23	97.18		

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	5th Cross Road		1.00	65.00	5.30	0.23	79.24		
	6th Cross Road		1.00	86.00	5.00	0.23	98.90		
	7th Cross Road		1.00	40.00	4.80	0.23	44.16		
	Srirampura Mn Rd to Jakkur Double Rd								
	Ch 0-275		1.00	275.00	7.30	0.35	702.63		
	Ch 285-445		1.00	160.00	8.00	0.35	448.00		
							1636.62	164.76	**269648.69**
5	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechaniqal mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density.complete as per specifications. MORTH Specification No. 406 (P.No.158, I.No.20.18 of PW,P&IWTD SR 2016-17)								
	Road Portion	Cum							
	1st Cross Road		1.00	40.00	5.00	0.23	46.00		
	2nd Cross Road		1.00	50.00	5.20	0.23	59.80		
	3rd Cross Road		1.00	55.00	4.80	0.23	60.72		
	4th Cross Road		1.00	65.00	6.50	0.23	97.18		
	5th Cross Road		1.00	65.00	5.30	0.23	79.24		
	6th Cross Road		1.00	86.00	5.00	0.23	98.90		
	7th Cross Road		1.00	40.00	4.80	0.23	44.16		
	Srirampura Mn Rd to Jakkur Double Rd								
	Ch 0-275		1.00	275.00	7.30	0.25	501.88		
	Ch 285-445		1.00	160.00	8.00	0.25	320.00		
							1307.87	1768.08	**2312409.95**
6	KSRRB M 500-6, Providing and applying primer coat with SS bitumen emulsion on prepared surface of granular Base such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kglsqm using mechanical means complete as per specifications. As per MORTH specification clause No. 502 (P.No.161, I.No.21.6 of PW,P&IWTD SR 2016-17)								
	Road Portion	Sqm							
	1st Cross Road		1	40.00	5.00	--	200.00		
	2nd Cross Road		1	50.00	5.20	--	260.00		
	3rd Cross Road		1	55.00	4.80	--	264.00		
	4th Cross Road		1	65.00	6.50	--	422.50		
	5th Cross Road		1	65.00	5.30	--	344.50		
	6th Cross Road		1	86.00	5.00	--	430.00		
	7th Cross Road		1	40.00	4.80	--	192.00		
	Srirampura Mn Rd to Jakkur Double Rd								
	Ch 0-275		1	275.00	7.30	--	2007.50		
	Ch 285-445		1	160.00	8.00	--	1280.00		
							5400.50	27.56	**148837.78**
7	KSRRB M500-7 : Providing and applying tack coat using 80/100 grade bitumen (VG10) on prepared black topped surfaces at 2.5 Kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH / Chapter 5 (P.No.161 I.No.21.7 of PW,P&IWTD SR of 2016-17)								
	Road Portion	Sqm							
	For Laying DBM								
	Srirampura Mn Rd to Jakkur Double Rd								
	Ch 0-275		1.00	275.00	7.30	--	2007.50		
	Ch 285-445		1.00	160.00	8.00	--	1280.00		
	For Laying BC								
	1st Cross Road		1.00	40.00	5.00	--	200.00		
	2nd Cross Road		1.00	50.00	5.20	--	260.00		

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	3rd Cross Road		1.00	55.00	4.80	--	264.00		
	4th Cross Road		1.00	65.00	6.50	--	422.50		
	5th Cross Road		1.00	65.00	5.30	--	344.50		
	6th Cross Road		1.00	86.00	5.00	--	430.00		
	7th Cross Road		1.00	40.00	4.80	--	192.00		
							5400.50	12.72	**68694.36**
8	KSRRB M500-17. Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10 complete in all respects complete as per specifications.. MORTH Specification No. 507 - using 40/60 TPH capacity H.M.P. with Mechanical paver Gr-II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen (P.No.165 of I.No.21.17.6 in PW,P&IWTD S.R 2016-17)								
	Srirampura Mn Rd to Jakkur Double Rd	Cum							
	Ch 0-275		1.00	275.00	7.30	0.05	100.38		
	Ch 285-445		1.00	160.00	8.00	0.05	64.00		
							164.38	7120.02	**1170353.29**
9	KSRRB M500-19. Providing and laying bituminous concrete 30-40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 5.4% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509 (P.No.165 of I.No.21.22.6 in PW,P&IWTD S.R 2016-17)								
	Road Portion	Cum							
	1st Cross Road		1.00	40.00	5.00	0.04	8.00		
	2nd Cross Road		1.00	50.00	5.20	0.04	10.40		
	3rd Cross Road		1.00	55.00	4.80	0.04	10.56		
	4th Cross Road		1.00	65.00	6.50	0.04	16.90		
	5th Cross Road		1.00	65.00	5.30	0.04	13.78		
	6th Cross Road		1.00	86.00	5.00	0.04	17.20		
	7th Cross Road		1.00	40.00	4.80	0.04	7.68		
	Srirampura Mn Rd to Jakkur Double Rd								
	Ch 0-275		1.00	275.00	7.30	0.04	80.30		
	Ch 285-445		1.00	160.00	8.00	0.04	51.20		
							216.02	8118.54	**1753767.01**

Sl. No.	Description of work	Unit	No.	Length m	Breadth m	Depth m	Quantity	Rate in Rs.	Amount in Rs.
10	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.(P.No.185, I.No.24.15 of PW,P&IWTD SR 2016-17)								
	Edge line	Sqm	2	836.00	0.10	--	167.20		
	Center Line		0.5	435.00	0.10	--	21.75		
							188.95	542.72	**102546.94**
								Total Construction Cost	**7351317.949**
11								**Cost towards Preparation of DPR LS**	**73514.00**
12								**Cost towards PMC / Third Party inspection LS**	**73514.00**
								Sub Total	**7498345.95**
13								**Miscellaneous and rounding off**	**1654.05**
								Total	**7500000.00**

Certificate.

1 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.
2 The provisions made in the estimate are necessary and essential.
3 The workspot was inspected and work is found to be necessary.
4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.

Tejus Consultant

Assistant Engineer

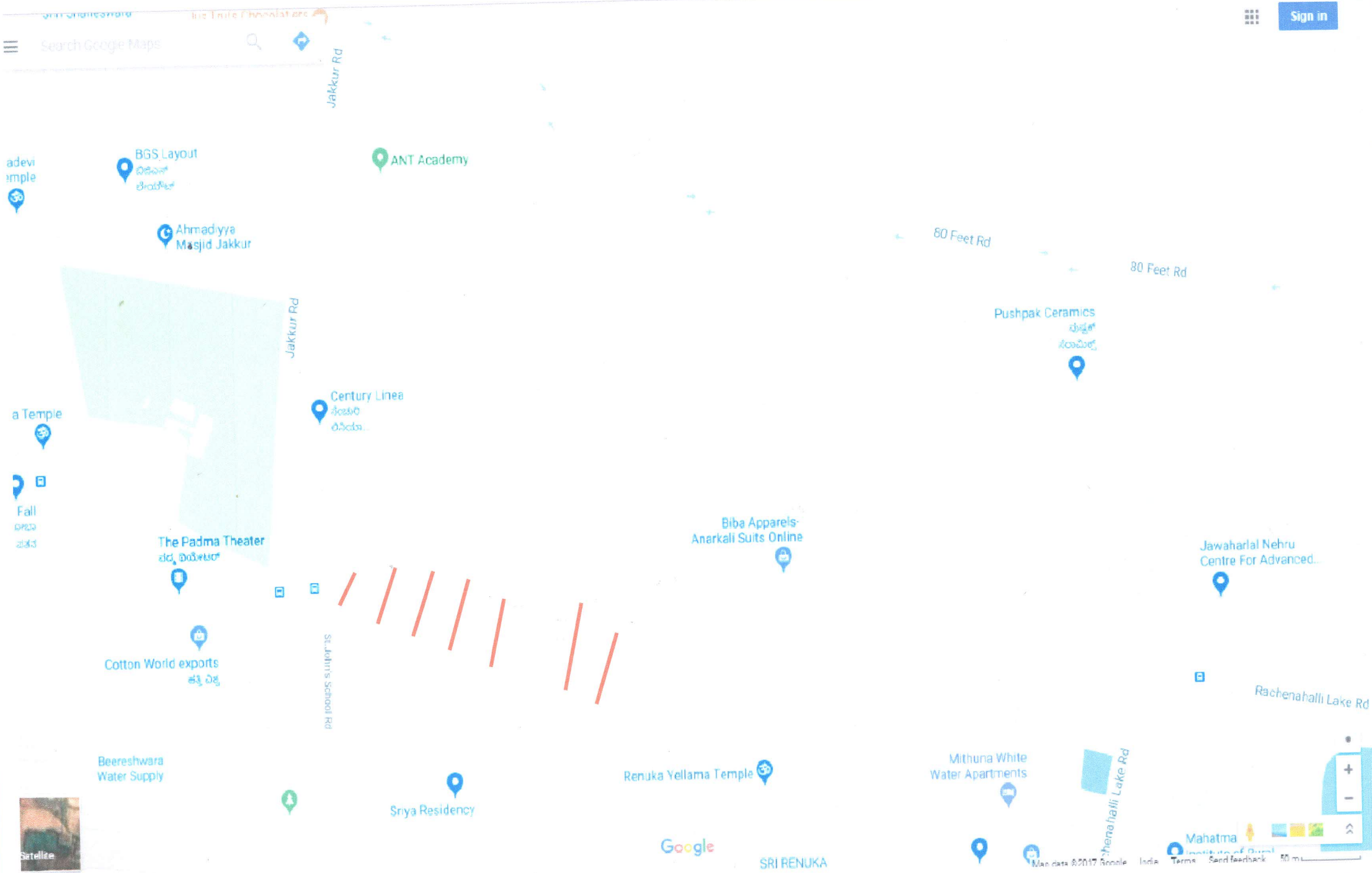
Assistant Executive Engineer

Executive Engineer

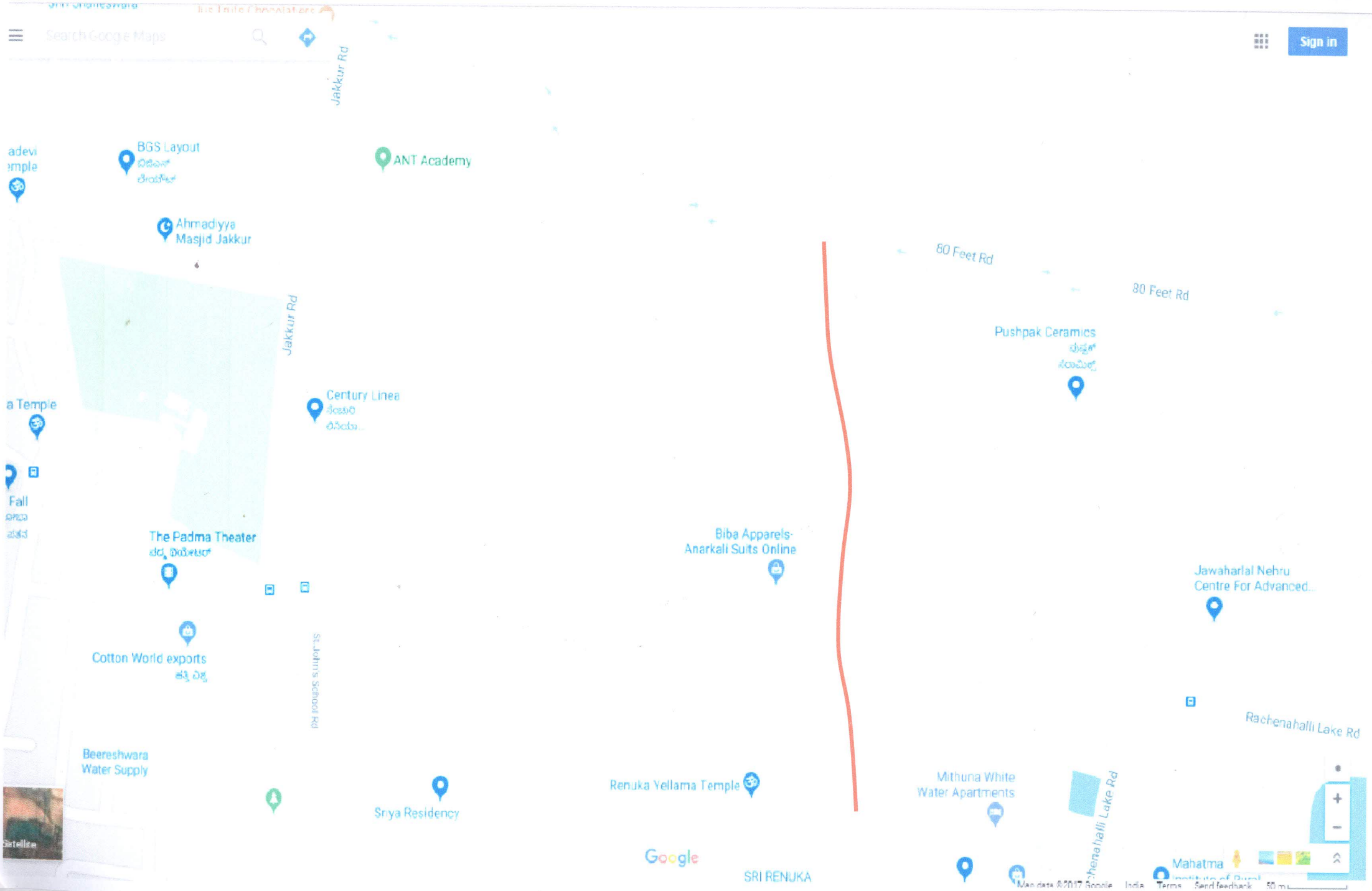
Technical Sanction
Accorded For ....75.00 Lakhs
Head of A/C....P31,58
CER NO :....."22"..... Dt:.. 29/01/18

TA CE (YNK)

KEY MAP – 4. Cross Road to Sri Rampura Main Road (Near Sobha Wind Fall)



KEY MAP – 4. Sri Rampura Main Road To Jakkur Double Road



5. Improvements to roads and drains from JNC Circle to Jakkur Double Road in Ward No. 7, Byatarayanapura

BRUHAT BANGALORE MAHANAGARA PALIKE

Project: 5.Improvements to roads and drains from JNC Circle to Jakkur Double Road in Ward No.7,Byatarayanapura

Est Cost: 65.0Lakh

Sl. No.	Description of work	Unit	No.	Length m	Breadth m	Depth m	Quantity	Rate in Rs.	Amount in Rs.
1	KSRRB M200-15.2. **Dismantling of existing structures** like culverts, Bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceble material and stacking the serviceble material with all lifts complete as per specifications. iii) Dismantling Stone Masonry B. Rubble Stone maonry in cement mortar (P.No.137, I.No.18.27 of PW,P&IWTD SR 2016-17)								
	SSM	Cum							
	Slab		1	9.00	5.00	0.25	11.25		
	Parapet Wall		2	9.00	0.45	0.90	7.29		
	Walls		4	5.00	0.90	2.00	36.00		
							54.54	380.27	**20739.93**
2	KSRRB M2100-1.1. Earth work in excavation for foundation of structures such as culverts, bridges etc., as per drawing and technical specifications, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material complete as per specifications I. Ordinary soil - A. Manual Means (i) Depth upto 3m MORTH Specification No. 304 including disposal of excavated earth upto a distance of 10km including loading and unloading charges(P.No.209, I.No.27.1 of PW,P&IWTD S.R 2016-17))								
		Cum							
	Bridge portion		1	13.35	10.00	1.50	200.25		
	Retaining wall								
	Up stream end & Down stream end		4	12.00	3.10	1.45	215.76		
							416.01	248.84	**103519.93**
3	KSRB 2.8 : Providing and Filling in foundation with granite / trap broken metal 100mm. and down size, with approved sand including hand packing, ramming, watering, including cost of all materials and labour with all lead and lift, complete as per specifications, specification. No. KBS (P.No.6, I.No.2.15 of PW,P&IWTD S.R 2016-17))								
		Cum							
	Bridge portion		1	12.35	10.00	0.30	37.05		
	Retaining wall								
	Up stream end & Down stream end		4	12.00	3.10	0.30	44.64		
							81.69	2283.12	**186508.07**
4	KSRRB M2100-13. Plain / Reinforced Cement Concrete M15 with OPC cement @ 240kgs, with 40mm and down size graded granite metal coarse aggregates @0.84cum and fine aggregates @ 0.56cum in Open Foundation complete as per Drawing and Technical Specifications MORTH Specification No. 1500,1700 & 2100.(P.No.211, I.No.27.24 of PW,P&IWTD S.R 2016-17)								
		Cum							
	Bridge portion		1	11.75	10.00	0.15	17.63		
	Approach Slab		2	3.50	10.00	0.15	10.50		
	Retaining wall								
	Up stream end & Down stream end		4	12.00	2.50	0.15	18.00		
							46.13	6340.68	**292495.57**

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
5	Diversion of water course by providing Coffer dams or bunds or islands as may be necessary for piers and abutments foundations, bailing out or pumping water during excavation and until completion etc., complete.(1.50 mtrs depth below LWL.)(P.No.257, I.No.37.41.1 of PW,P&IWTD S.R 2016-17)								
		Cum							
	Bridge portion		3	10.00	1.50	1.50	67.50		
							67.50	289.44	**19537.20**
6	Diversion of water course by providing Coffer dams or bunds or islands as may be necessary for piers and abutments foundations, bailing out or pumping water during excavation and until completion etc., complete.(beyond 1.50 mtrs depth upto & including 3m)(P.No.257, I.No.37.41.2 of PW,P&IWTD S.R 2016-17)								
		Cum							
	Bridge portion		3	10.00	1.50	1.50	67.50		
							67.50	356.40	**24057.00**
7	KSRRB M800-43. Installation of a steel portable barricade with horizontal rail 300 mm wide, 2.5 m in length fitted on a 'A' frame made with 45 x 45 x 5 mm angle iron section, 1.5 m in height, horizontal rail painted (2 coats) with yellow and white stripes, 150 mm in width at an angle of 45°, 'A' frame painted with 2 coats of yellow paint, complete as per IRC:SP:55-2001 complete as per specifications.(P.No.186, Item no 24.44 of PW,P&IWTD S.R 2016-17))								
	Barricade	each							
	Bridge portion		1	10.00	--	--	10.00		
							10.00	2561.76	**25617.60**
8	KSRRB M2100-20.2. Plain / Reinforced Cement Concrete in Open Foundation with OPC cement design mix M35 @ 390kgs, with 20mm and down size graded granite metal coarse aggregates @0.68cum and fine aggregates @ 0.45cum, with superplastisiser @3lts confirming to IS9103-1999 Reaffirmed-2008. case II : With Batching Plant, Transit Mixer and Concrete Pump MORTH Specification No. 1500,1700 & 2100(P.No.213, I.No.27.37 of PW,P&IWTD S.R 2016-17)								
		Cum							
	Bridge portion								
	Footing								
	Base Slab		1	11.35	10.00	0.55	62.43		
							62.43		
	Retaining wall								
	Up stream end & Down stream end		4	12.00	2.20	0.20	21.12		
			4	12.00	1.33	0.25	15.96		
							37.08		
							99.51	6967.08	**693259.30**
9	KSRRB M2200-5.19. Design mix M35 with OPC cement @ 390kgs,with 20mm and down size graded granite metal coarse aggregates @0.68cum and fine aggregates @ 0.45cum, with superplastisiser @3lts confirming to IS9103-1999 Reaffirmed-2008 - ii) For height, upto 5m,(P.No.214, I.No.28.7.18 of PW,P&IWTD S.R S.R 2016-17)								
	Bridge portion	Cum							
	Side Walls		2	10.00	0.50	2.50	25.00		
	Centre Wall		1	10.00	0.45	2.50	11.25		
	Haunch	0.5	4	10.00	0.15	0.45	1.35		
							37.60		
	Retaining wall								
	Up stream end & Down stream end								
			4	12.00	0.33	2.50	39.60		
							77.20	7848.36	**605893.39**

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
10	KSRRB M2300-8.1. Furnishing and Placing Reinforced/ Prestressed cement concrete in super-structure as per drawing and Technical Specification complete as per specifications. D. RCC / PSC with OPC cement design mix M35 @ 390kgs, with 20mm and down size graded granite metal coarse aggregates @0.68cum and fine aggregates @ 0.45cum, with superplastisiser @3lts confirming to IS9103-1999 Reaffirmed-2008, Case - II : Using Batching Plant, Transit Mixer & Concrete Pump MORTH Specification No. 1500,1600 & 1700-Height upto 5 m(P.No.226 , I.No.29.16.1 of PW,P&IWTD S.R S.R 2016-17)								
	Bridge portion								
	Top Slab	Cum	1	11.35	10.00	0.55	62.43		
	Haunch	0.5	4	10.00	0.15	0.45	1.35		
	Wedge		2	10.00	0.15	0.30	0.90		
	Approach slab		2	3.50	10.00	0.30	21.00		
	Crash Barrier		2	11.35	0.15	1.18	4.00		
			2	11.35	0.94	0.23	4.79		
							94.46	7522.20	**710578.28**
11	KSRRB M2200 -6 Supplying , fitting and placingTMT bar Fe 550 reinforcement in sub-structure complete as per drawing & technical specification complete as per the specification . MORTH Specification No.1600 & 2200(P.No.218 , I.No.28.8.3 of PW,P&IWTD S.R 2016-17)								
	Consider 130kg/cum for Bridge portion	Tonne		100.03	--	0.130	13.00		
	Consider 90kg/cum for Retaining wall			76.68	--	0.090	6.90		
							19.90	68473.08	**1362614.29**
12	KSRRB M2300 -14. supplying , fitting and placing TMT bar Fe 550 reinforcement in super-structure complete as per as per drawing & technical specification complete as per the specification . MORTH Specification No.1600.(P.No.231 , I.No.29.29.3 of PW,P&IWTD S.R 2016-17))								
	Consider 130kg/cum for Bridge	Tonne		94.46	--	0.130	**12.28**	69599.52	**854682.11**
13	KSSRB M220 - 8. Providing weep holes in Brick masnory / Plain / Reinforced concrete abutment, wing wall / return wall with 100mm dia AC pipe, extending through the full width of the structure with slope of 1V:20H towards drawing foce. Complete as per drawing and Technical specifications complete as per specifications. MORTH Specification No. 2706 & 2200 (P.No.218, I.No.28.10 of PW,P&IWTD S.R 2016-17))								
	Bridge portion	No./Mtr							
	Box	2	15		--	--	30.00		
	10/2)*3 = 14								
	Up stream end & Down stream end	4	24		--	--	96.00		
	(12/2)*4 = 30								
							126.00	181.44	**22861.44**
14	KSRRB M2700-4. Providing, fitting and fixing mild steel railing complete as per drawing and Technical Specification complete as per specifications MORTH Specification No. 2703.2, 1900'(P.No.239, I.No.32.4 of PW,P&IWTD S.R 2016-17))								
	Railing	m							
			2	11.35	--	--	22.70		
							22.70	3139.56	**71268.01**
15	KSRRB M2700-5. Drainage Spouts complete as per drawing and Technical specification complete as per specifications MORTH Specification No. 2705(P.No.239, I.No.32.5 of PW,P&IWTD S.R 2016-17))								
	Railing	No							
			2	10.00	--	--	20.00		
							20.00	1776.60	**35532.00**
16	KSRRB M2300-16. Providing and laying Cement concrete wearing coat with OPC cement design mix M30 @ 360kgs, with 20mm and down size graded granite metal coarse aggregates @0.69cum and fine aggregtes @ 0.46cum, with superplastisiser @3lts confirming to IS9103-1999 Reaffirmed-2008 including reinforcement complete as per drawing and Technical Specifications complete as per specifications MORTH Specification No. 2702'(P.No.239, I.No.32.8 of PW,P&IWTD S.R 2016-17))								

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	Wearing Coat	Cum							
			1	11.35	10.00	0.10	11.35		
							11.35	11100.24	**125987.72**
17	KSRRB 2200-9 Filter Media Providing & laying of Filter media With Granular meterails / Stone crushed aggregates satisfying the requirement laid down in clause 2500.4.2.2 of MORTH Specification to a thickness on not less than 600 mm width smaller size towards the soil & bigger size towards wall & provided over the entire surface behind Abutment, Wing wall & return wall to the full height compacted to a firm condition complete as per Drawing & Techincal Specifications. Complete as per specification MORTH Specification No. 710.14of IRC: 78& 2200(P.No.218, I.No.28.13 of PW,P&IWTD 2016-17))								
	Bridge portion								
	Box Portion	Cum	2	10.00	0.60	3.50	42.00		
	Retaining wall								
	Up stream end & Down stream end		4	12.00	0.60	2.50	72.00		
							114.00	1399.68	**159563.52**
18	KSRRB 2200-8.1 Back filling behind Abutment, Wing wall & return wall to the full height compacted to a firm condition complete as per Drawing & Techincal Specifications. Complete as per specification A. Granular Material MORTH Specification No. 710.14of IRC: 78& 2200.With all Leads & Lift etc & as per the direction of the Engineer Incharge of the Work.(P.No.218, I.No.28.11 of PW,P&IWTD S.R 2016-17))								
	Bridge portion								
	Abutment	Cum	2	10.00	0.35	3.50	24.50		
	Retaining wall								
	Up stream end & Down stream end		4	12.00	1.30	2.60	162.24		
							186.74	565.92	**105679.90**
19	KSRRB M2500-11. Construction of flexible apron 1 m thick comprising of loose stone boulders weighing not less than 40 kg beyond curtain wall complete as per specifications MORTH Specification No. 2507.2(P.No.241, I.No.30.14 of PW,P&IWTD S.R 2016-17))								
	U /S End	Cum	1	11.45	12.00	1.00	137.40		
	D/S End		1	11.45	12.00	1.00	137.40		
							274.80	1558.44	**428259.31**
20	KSRRB 2500 - 5.1 Providing & laying , flooring complete as per and technical specifiactions laid over cement concrete bedding complete as per specification. A. Rubble Stone laid in CM 1:3 MORTH Specification No. 2505(P.No.240, Item no 30.7 of PW,P&IWTD S.R 2016-17))								
	U /S End	Cum	1	11.45	12.00	0.30	41.22		
	D/S End		1	11.45	12.00	0.30	41.22		
							82.44	4925.88	**406089.55**

Sl. No.	Description of work	Unit	No.	Length m	Breadth m	Depth m	Quantity	Rate in Rs.	Amount in Rs.
21	KSRRB M2500-10.Curtain wall complete as per drawing and Technical Specifications. B. Cement Concrete Grade M-15 MORTH Specification No. 2507.2(P.No.241, Item no 30.13 of PW,P&IWTD S.R 2016-17))								
		Cum							
	U /S End		1	11.45	0.60	1.50	10.31		
	D/S End		1	11.45	0.60	1.50	10.31		
							20.61	5630.04	**116035.12**
								Total Construction Cost	**6370779.240**
22								**Cost towards Preparation of DPR LS**	**63708.00**
23								**Cost towards PMC / Third Party inspection LS**	**63708.00**
								Sub Total	**6498195.24**
24								**Miscellaneous and rounding off**	**1804.76**
								Total	**6500000.00**

Certificate.

1 The workspot was inspected and work is found to be necessary.
2 The area comes within the Bruhat Bangalore Mahanagara Palike limits.
3 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.
4 The provisions made in the estimate are necessary and essential.

For Tejus Consultants

Assistant Engineer

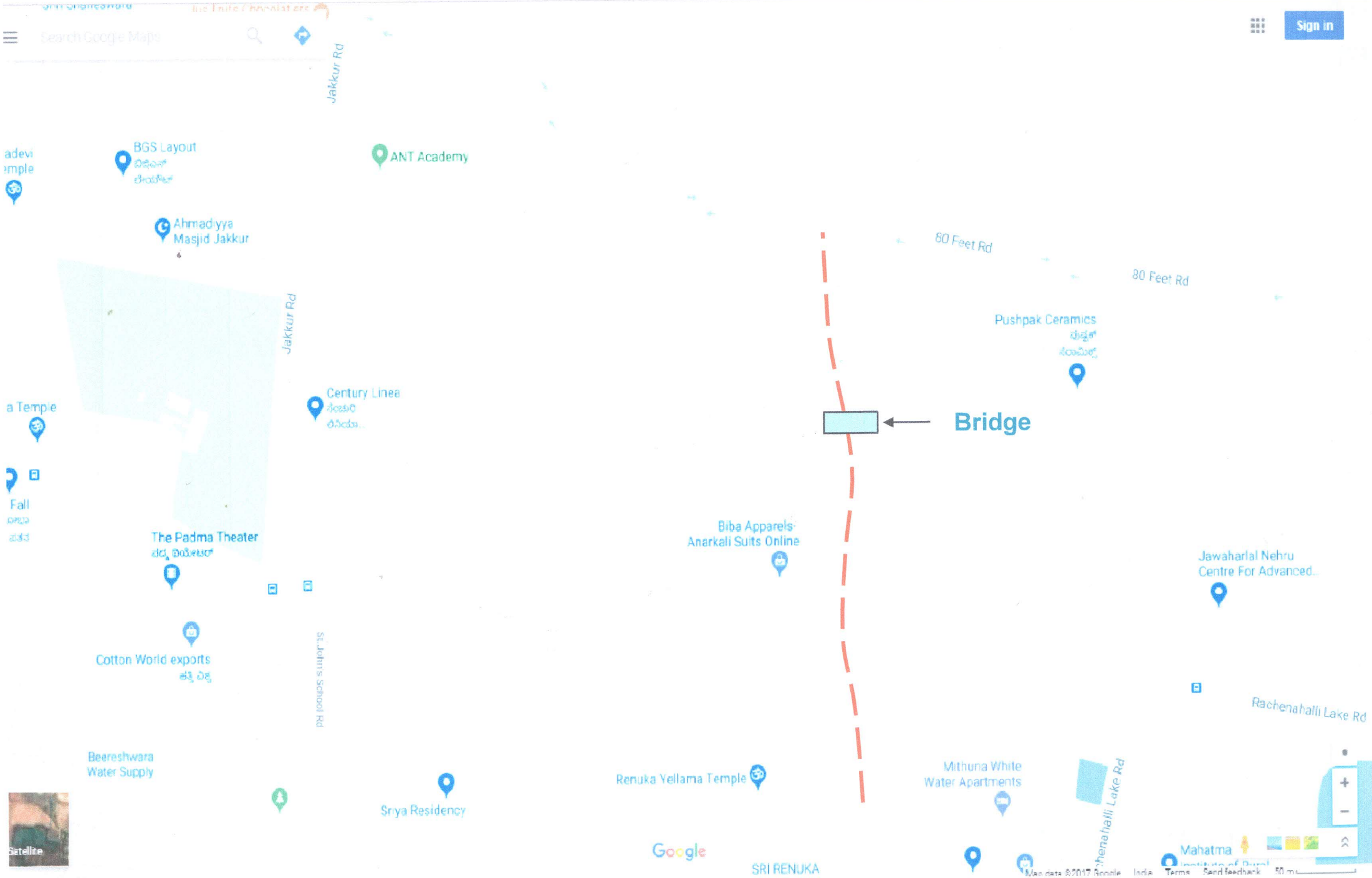
Assistant Executive Engineer

Executive Engineer

Technical Sanction
Accorded For 65.00 Lakhs
Head of A/C P3158
CER NO "23" Dt. 29/01/18

TA CE (YNK)

KEY MAP – 5. Bridge in Connecting Road



6. Improvements to roads and drains of Kallappa Layout(Left Hand side and Right Hand Side of Main Road) in Ward No.7, Byatarayanapura.

BRUHAT BANGALORE MAHANAGARA PALIKE

Project: 6.Improvements to roads and drains of Kallappa Layout(Left Hand side and Right Hand Side of Main Road) in Ward No.7,Byatarayanapura

Est Cost: 40.0Lakh

Sl. No.	Description of work	Unit	No.	Length m	Breadth m	Depth m	Quantity	Rate in Rs.	Amount in Rs.
1	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neately dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWTD SR 2016-17)								
	Desilt	Cum							
	Kallappa Layout								
	1st Cross Road		2	58.00	0.50	0.40	23.20		
	2nd Cross Road		2	123.00	0.50	0.40	49.20		
	3rd Cross Road		2	252.00	0.50	0.40	100.80		
	Main Road		2	136.00	0.50	0.40	54.40		
	Culvert		3	6.80	2.00	1.00	40.80		
							268.40	202.92	**54463.73**
2	Removing and refixing stone slabs of drains and pointing in CM (1:3) (P.No.25, I.No.5.33 of PW, P&IWTD SR 2016-17)								
	Drain	Sqm							
	1st Cross Road		2	58.00	1.80		208.80		
	2nd Cross Road		2	123.00	1.80		442.80		
	3rd Cross Road		2	252.00	1.80		907.20		
	Consider 20% for R&R						311.76		
	Consider 15% for Damaged and Missing Slabs						-46.76		
							265.00	80.56	**21348.08**
3	Providing granite Slabs of Selected quality roughly dressed and fixed in cement mortor (1:6) including fixing curing etc,. Complete. 7.5cms thick (P.No.25, I.No.5.31.1 of PW, P&IWTD SR 2016-17)								
	For BS Slab Drain	Sqm							
	Consider 15% for Damaged and Missing Slabs						46.76		
							46.76	665.68	**31129.86**
4	KSRB 4-1.2: Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @ 220kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.892 cum and fine aggregates @ 0.465 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.2 of PW,P&IWTD S.R 2016-17)								
	For Bed	Cum							
	1st Cross Road		4	58.00	0.30	0.10	6.96		
	2nd Cross Road		4	123.00	0.30	0.10	14.76		
	3rd Cross Road		4	252.00	0.30	0.10	30.24		
	Culvert		3	6.80	2.00	0.15	6.12		
							58.08	5348.76	**310655.98**
5	KSRB 5.2-3 : Providing and constructing granite / trap / basalt size stone masonry in foundation with cement mortar 1:6, stone hammerd dressed in courses not less than 20 cms high, bond stones at two m. apart in each course including cost of materials, labour, curing complete as per specifications. KBS 5.1.13 (P.No.12, I.No.5.6 of PW,P&IWTD S.R 2016-17)								
	For Bed	Cum							
	1st Cross Road		2	58.00	0.45	0.23	12.01		
	2nd Cross Road		2	123.00	0.45	0.23	25.46		

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	3rd Cross Road		2	252.00	0.45	0.23	52.16		
	Culvert		6	6.80	0.60	0.90	22.03		
							111.66	4438.22	**495584.96**
6	KSRB 5-11 : Providing and constructing load bearing wall with solid concrete blocks of size 400x150x200 mm having block density not lessthan 1800 kg/m3 and having a minimum average compressive strength 5.00 N/mm2 confirming to IS 2185 (Part) : 2005 and constructed with CM 1:4 , as per IS 2572:2005 including cost of all materials, labour charegs, scaffolding, curing complete as per specifications. KBS No.5.4 (P.No.12, I.No.5.27.2 of PW,P&IWTD S.R 2016-17)								
	For Bed	Sqm							
	1st Cross Road		2	58.00		0.20	23.20		
	2nd Cross Road		2	123.00		0.20	49.20		
	3rd Cross Road		2	252.00		0.20	100.80		
							173.20	880.86	**152564.95**
7	KSRB 15.1.1 Providing flush pointing to square rubble, course or uncoursed stone masonry with cement mortar 1:3, 20mm deep, after raking joints to depth of 20mm nicely lining, including cost of materials, labour, curing complete as per specifications. (P.No.113, I.No.15.1 of PW, P&IWTD S.R 2016-17)								
	For Bed	Sqm							
	1st Cross Road		2	58.00		0.23	26.68		
	2nd Cross Road		2	123.00		0.23	56.58		
	3rd Cross Road		2	252.00		0.23	115.92		
	Culvert		6	6.80		0.90	36.72		
							235.90	102.82	**24255.24**
8	KSRB 4-1.6: Providing and laying in position plain cement concrete of mix 1:2:4 with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.878 cum and fine aggregates @ 0.459 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation and plinth, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.6 of PW,P&IWTD S.R 2016-17)								
	For Bed	Cum							
	1st Cross Road		4	58.00	0.30	0.075	5.22		
	2nd Cross Road		4	123.00	0.30	0.075	11.07		
	3rd Cross Road		4	252.00	0.30	0.075	22.68		
	Main Road		4	136.00	0.15	0.075	6.12		
	Culvert		6	6.80	0.60	0.100	2.45		
							47.54	5767.46	**274173.51**
9	Providing and fixing **RCC Precast cover slab of 100mm thick** for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per drawing and the directions of Engineer in-charge. (Data Rate)								
	For Bed	Cum							
	1st Cross Road		2	58.00	1.20		139.20		
	2nd Cross Road		2	123.00	1.20		295.20		
	3rd Cross Road		2	252.00	1.20		604.80		
	Main Road		2	136.00	1.20		326.40		
							1365.60	1738.00	**2373412.80**
10	Providing and fixing **RCC Precast cover slab of 250mm thick** for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per drawing and the directions of Engineer in-charge. (Data Rate)								
	For Bed	Cum							

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	Culvert		3	6.80	1.80		36.72		
							36.72	4951.00	**181800.72**
								Total Construction Cost	**3919389.830**
11								**Cost towards Preparation of DPR LS**	**39194.00**
12								**Cost towards PMC / Third Party inspection LS**	**39194.00**
								Sub Total	**3997777.83**
13								**Miscellaneous and rounding off**	**2222.17**
								Total	**4000000.00**

Certificate.

1 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.
2 The provisions made in the estimate are necessary and essential.
3 The workspot was inspected and work is found to be necessary.
4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.

Assistant Engineer

Assistant Executive Engineer

Executive Engineer

ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಭಿಯಂತರರು
ವ್ಯಾಪಾರಾಯನಪುರ ವಿಭಾಗ ಯಲಹಂಕ ವಲಯ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ ಬೆಂಗಳೂರು-560092.

Technical Sanction
Accorded For ... 40.00 Lakhs
Head of A/c ... P3158
CER NO ... 124 ... Dtd ... 29/01/18

CE (YNK)

KEY MAP – 6. Kallappa Layout

7. Improvements to Roads and Drains of Pampa Extension main road to Coffee board Layout Main road(via From Canara Bank ATM and Raghvendra Hotel Circle and Kuvempu road)in ward No 07 Byatarayanapura.

BRUHAT BANGALORE MAHANAGARA PALIKE

Project: 7.Improvements to Roads and Drains of Pampa Extension main road to Coffee board Layout Main road(via From Canara Bank ATM and Raghvendra Hotel Circle and Kuvempu road)in ward No 07 Byatarayanapura

Est Cost: =50.0Lakh

Sl. No.	Description of work	Unit	No.	Length m	Breadth m	Depth m	Quantity	Rate in Rs.	Amount in Rs.
1	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neatly dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWTD SR 2016-17)								
	Desilt	Cum							
	Kuvempu road(raghvendra circle to coffee board layout main road)		2	690.00	0.60	0.60	496.80		
	coffee board park to Dasrahalli main road		2	392.00	0.60	0.60	282.24		
	5th Cross Rd		2	98.00	0.60	0.60	70.56		
	6th Cross Rd		2	107.00	0.60	0.60	77.04		
	7th Cross Rd		2	118.00	0.60	0.60	84.96		
	8th Cross Rd		2	117.00	0.60	0.60	84.24		
	1st Cross Road		2	114.00	0.60	0.60	82.08		
							1177.92	202.92	**239023.53**
2	Removing and refixing stone slabs of drains and pointing in CM (1:3) (P.No.25, I.No.5.33 of PW, P&IWTD SR 2016-17)								
	Bs Slab	Sqm							
	5th Cross Rd		2	98.00	1.80		352.80		
	6th Cross Rd		2	107.00	1.80		385.20		
	7th Cross Rd		2	118.00	1.80		424.80		
	8th Cross Rd		2	117.00	1.80		421.20		
	1st Cross Road		2	114.00	1.80		410.40		
	BS Slab Cover		2	50.00	1.20		120.00		
	Consider 20% for Damaged and Missing Covering Slabs						-24.00		
	Consider 20% for Damaged and Missing Slabs						-398.88		
							1691.52	80.56	**136268.85**
3	Providing granite Slabs of Selected quality roughly dressed and fixed in cement mortor (1:6) including fixing curing etc,. Complete. 7.5cms thick (P.No.25, I.No.5.31.1 of PW, P&IWTD SR 2016-17)								
	For BS Slab Drain	Sqm							
	Consider 20% for Damaged and Missing Slabs						398.88		
							398.88	665.68	**265526.44**
4	Providing granite Slabs of Selected quality roughly dressed and fixed in cement mortor (1:6) including fixing curing etc,. Complete. 10cms thick (P.No.25, I.No.5.31.2 of PW, P&IWTD SR 2016-17)								
	For BS Slab Drain Cover	Sqm							
	Consider 20% for Damaged and Missing Covering Slabs						24.00		
							24.00	825.74	**19817.76**
5	KSRRB M300-14. Excavation for roadwork in soil with hydraulic excavator of 0.90 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to embankment location and complete as per specifications. MORTH Specification No.301 (P.No.143, I.No.19.14 of PW,P&IWTD S.R 2016-17)								
	Road Portion	Cum							
	Bad Reaches								
			8	2.00	2.00	0.23	7.36		

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
			15	1.80	1.50	0.23	9.32		
			1	40.00	2.50	0.30	30.00		
			10	1.50	1.50	0.23	5.18		
							51.85	164.76	**8542.81**
6	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechaniqal mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density.complete as per specifications. MORTH Specification No. 406 (P.No.158, I.No.20.18 of PW,P&IWTD SR 2016-17)								
	Bad Reaches	Cum							
			8	2.00	2.00	0.23	7.36		
			15	1.80	1.50	0.23	9.32		
			1	40.00	2.50	0.30	30.00		
			10	1.50	1.50	0.23	5.18		
							51.85	1768.08	**91674.95**
7	KSRRB M 500-6, Providing and applying primer coat with SS bitumen emulsion on prepared surface of granular Base such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kglsqm using mechanical means complete as per specifications. As per MORTH specification clause No. 502 (P.No.161, I.No.21.6 of PW,P&IWTD SR 2016-17)								
	Bad Reaches	Cum							
			8	2.50	2.50	--	50.00		
			15	2.00	1.50	--	45.00		
			1	40.00	2.50	--	100.00		
			10	1.50	1.50	--	22.50		
							217.50	27.56	**5994.30**
8	KSRRB 500-2: Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatement including cost of all materials, labour, HOM of machineries complete as per specifications. MORTH Spec, Chapter 5 (P.No.161, I.No.21.2 of PW,P&IWTD SR 2016-17)								
	Road Portion	Sqm							
	Kuvempu road(raghvendra circle to coffee board		1	690.00	7.90	--	5451.00		
	coffee board park to Dasrahalli main road		1	392.00	7.50	--	2940.00		
	5th Cross Rd		1	98.00	5.00	--	490.00		
	6th Cross Rd		1	107.00	5.20	--	556.40		
	7th Cross Rd		1	115.00	5.40	--	621.00		
	8th Cross Rd		1	120.00	5.00	--	600.00		
	1st Cross Road		1	114.00	5.20	--	592.80		
	Bell mouth		9	5.00	6.00	--	270.00		
							11521.20		
	Deduct prime coat						-217.50		
							11303.70	3.18	**35945.77**
9	KSRRB M500-7 : Providing and applying tack coat using 80/100 grade bitumen (VG10) on prepared black topped surfaces at 2.5 Kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH / Chapter 5 (P.No.161 I.No.21.7 of PW,P&IWTD SR of 2016-17)								
		Sqm							
	For Laying BC								
	Kuvempu road(raghvendra circle to coffee board		1	690.00	7.90	--	5451.00		
	coffee board park to Dasrahalli main road		1	392.00	7.50	--	2940.00		
	5th Cross Rd		1	98.00	5.00	--	490.00		
	6th Cross Rd		1	107.00	5.20	--	556.40		
	7th Cross Rd		1	115.00	5.40	--	621.00		
	8th Cross Rd		1	120.00	5.00	--	600.00		
	1st Cross Road		1	114.00	5.20	--	592.80		
	Bell mouth		9	5.00	6.00	--	270.00		
							11521.20	12.72	**146549.66**

Sl. No.	Description of work	Unit	No.	Length m	Breadth m	Depth m	Quantity	Rate in Rs.	Amount in Rs.
10	KSRRB M500-19. Providing and laying bituminous concrete 30-40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 5.4% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509 (P.No.165 of I.No.21.22.6 in PW,P&IWTD S.R 2016-17)								
		Cum							
	Kuvempu road(raghvendra circle to coffee board		1	690.00	7.90	0.04	218.04		
	coffee board park to Dasrahalli main road		1	392.00	7.50	0.04	117.60		
	5th Cross Rd		1	98.00	5.00	0.04	19.60		
	6th Cross Rd		1	107.00	5.20	0.04	22.26		
	7th Cross Rd		1	115.00	5.40	0.04	24.84		
	8th Cross Rd		1	120.00	5.00	0.04	24.00		
	1st Cross Road		1	114.00	5.20	0.04	23.71		
	Bell mouth		9	5.00	6.00	0.04	10.80		
							460.85	8118.54	**3741412.92**
11	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.(P.No.185, I.No.24.15 of PW,P&IWTD SR 2016-17)								
	Edge line	Sqm	2	1636.00	0.10	--	327.20		
			0.5	1082.00	0.10	--	54.10		
							381.30	542.72	**206939.14**
								Total Construction Cost	**4897696.128**
12								**Cost towards Preparation of DPR LS**	**48977.00**
13								**Cost towards PMC / Third Party inspection LS**	**48977.00**
								Sub Total	**4995650.13**
14								**Miscellaneous and rounding off**	**4349.87**
								Total	**5000000.00**

Certificate.

1 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.
2 The provisions made in the estimate are necessary and essential.
3 The workspot was inspected and work is found to be necessary.
4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.

For Tejus Consultants

Assistant Engineer

Assistant Executive Engineer

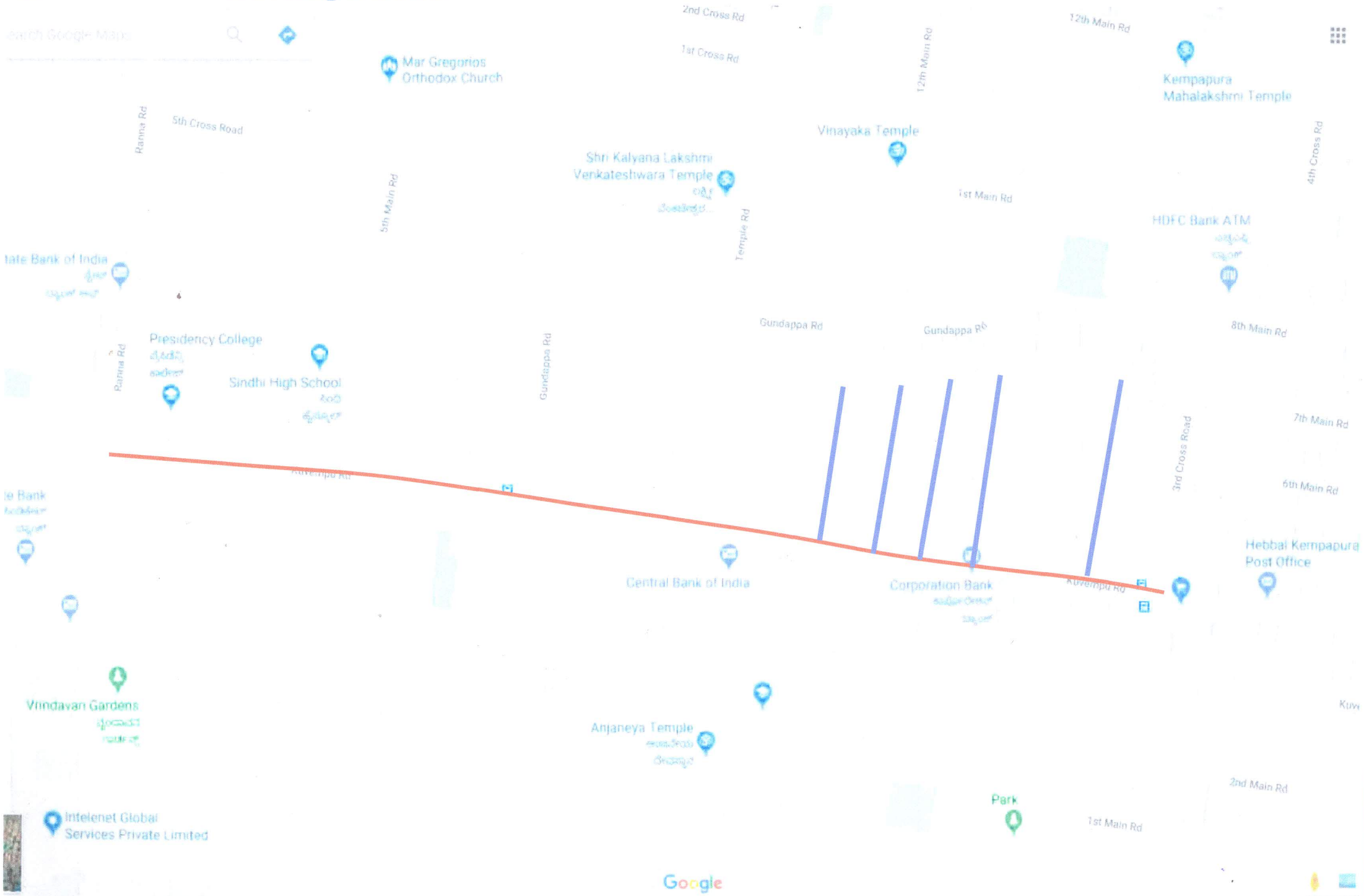
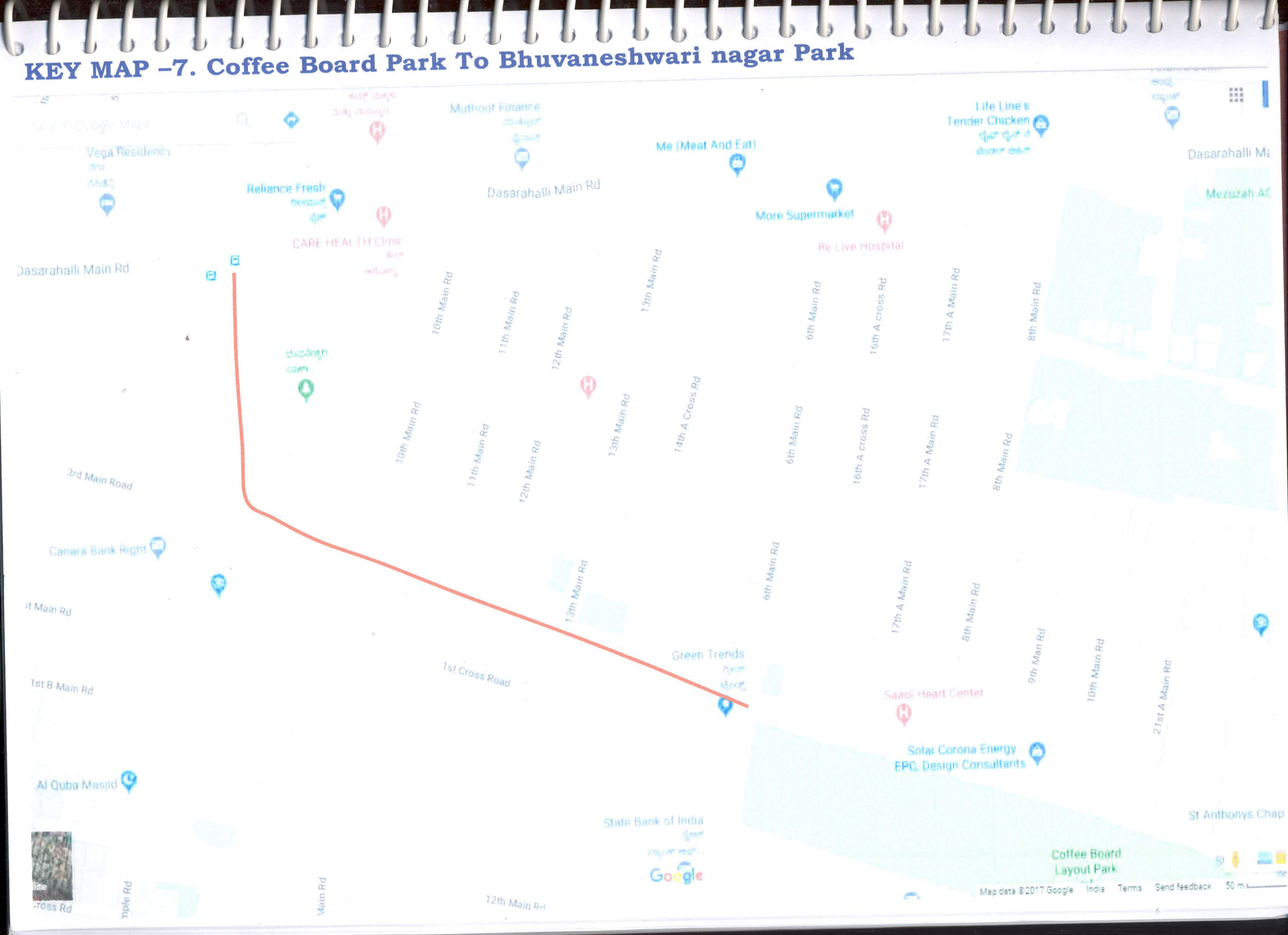
Executive Engineer

ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಡರಾಯನಪುರ ವಿಭಾಗ ಯಲಹಂಕ ವಲಯ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ ಬೆಂಗಳೂರು-560092.

Technical Sanction
Accorded For 50.00 Lakhe
Head of A/C P3158
CER NO "25" Dt. 29/01/18

TA DE (YNK)

KEY MAP – 7. Kuvempu Road



KEY MAP –7. Coffee Board Park To Bhuvaneshwari nagar Park